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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/262,912	03/05/99	VUORINEN	T 30-497

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IM52/0216

EXAMINER	
ALVO, M	
ART UNIT	**PAPER NUMBER**
1731	8

DATE MAILED: 02/16/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/262,912	VUORINEN et al
Examiner	**Group Art Unit**
Steve Alvo	1731

☒ Responsive to communication(s) filed on *Dec 18, 2000*.

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *21-40* is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *21-40* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 21, 26-28, 30-32, 34 and 39 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over WO 91/05909.

WO 91/05909 teaches bleaching kraft pulp in a first 0.4% to 1.0% (Table 2 on pages 14 and 15) chlorine dioxide in a chlorine dioxide bleaching step for a time of 5 minutes at a temperature of 85°C (over 70°C) a pH maintained between 6.0 and 7.5 (e.g. over 4.0), then adding acid to reduce the pH to 3.8 and bleaching in a second chlorine dioxide step at a temperature of 85°C (over 80°C), See WO 91/05909, page 8, line 23- page 9, line 15. If WO 91/05909 does not teach the exact claimed conditions then such would have been obvious to the routineer to optimize the bleaching. For example, it is known that higher temperature decrease the bleaching time required to obtain a certain brightness. Thus it would have been obvious to one of ordinary skill in the art that at in the first stage of WO 91/05909 when using the highest disclosed (85°C) temperature to use the shortest reaction time (5 minutes). WO 91/05909 teaches using sequences which include a second chlorine dioxide stage. See Tables 1-3 of WO 91/05909 for chlorine dioxide dosage of 0.5-1.5% in the first chlorine dioxide stage and 0.5 to 2.0% in the

second stage. It would have been obvious to perform the bleaching and acid adjusting steps in inlet lines and/or reactors as such is taught by WO 91/05909, e.g. initial D step in inlet line reacted in upflow reactor and/or J or U tube, acid added to reactor and/or J or U tube outlet line and last chorine dioxide step occurs in downflow reactor.

Claims 22-24 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 91/05909 as applied to claim 21 above, and further in view of VUORINEN et al.

WO 91/05909 teaches maintaining the pH during the first step between 6.0 and 7.5 (over 5.0). VUORINEN et al teaches that hexenuronic acids react with the ene functionality of hexenuronic acid groups and that this can be prevented by converting the hexenuronic acid groups to 2-furoic plus formic acids and 5-carboxy-2-furaldehyde through acid hydrolysis. It would have been obvious to improve the brightness stability of the pulp of WO 91/05909 by removing the hexenuronic acids by performing an acid hydrolysis in the manner taught by VUORINEN et al.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 91/05909 as applied to claim 21 above, and further in view of DEVENYNS et al.

DEVENYNS et al teaches using a chelating agent after a chlorine dioxide stage to remove metal ions from the pulp prior to a peroxide bleaching stage. It would have been obvious if the pulp is to be further bleached with peroxide to treat the pulp with a chelating agent as taught by DEVENYNS et al.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 91/05909 in view of VUORINEN et al as applied to claim 24 above, and further in view of HISTEAD et al.

HISTEAD et al teaches using chlorine dioxide bleaching times decrease at higher temperatures (see section on page 41 (T36) under Table I) and teaches at 80°C that a reaction time of 2 minutes can be used. It would have been obvious to use the 2 minute reaction time of HISTEAD et al for the first step of WO 91/05909.

Claims 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 91/05909 in view of VUORINEN et al as applied to claim 4 above, and further in view of CARLES et al.

It would have been obvious to one of ordinary skill in the art to use chlorine dioxide temperatures of up to 90°C during the chlorine dioxide bleaching steps of WO 91/05909 as such is taught by CARLES et al.

Claims 33 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 91/05909 in view of VUORINEN et al and CARLES et al as applied to claim 38 above, and further in view of HISTEAD.

HISTEAD et al teaches using chlorine dioxide bleaching times decrease at higher temperatures (see section on page 41 (T36) under Table I) and teaches at 80°C that a reaction time of 2 minutes can be used. It would have been obvious to use the 2 minute reaction time of HISTEAD et al for the first step of WO 91/05909.

Applicant has argued that the acid treatment is solely an acid step and only contains residual chlorine dioxide. However, the specification on page 7, lines 7-9 and original claim 1 call for "(b) in the chlorine dioxide stage effecting an acid treatment". There is no disclosure that all

the chlorine dioxide is consumed before the acid is added. The acid treatment would take place in the presence of at least some chlorine dioxide. The instant claims nor the instant disclosure do not indicate how much chlorine dioxide remains with the pulp during acid treatment. Thus the claims of the instant case do not distinguish over the acid addition of WO/05909.

The argument that the 0.6% chlorine dioxide of WO/05909 is equivalent to 1.58% active chlorine is not convincing as the claims use the term "about". The 1.58% is within the claimed "about" 1.5% active chlorine of claim 1. Besides the Table on page 3 uses 0.4% chlorine dioxide. This is equivalent to 1.05% active chlorine using the 2.63 multiplier argued by Applicant and within the claimed "about 0.5 to 1.0%" claimed by Applicant. The term "about" permits some tolerance, and therefore encompasses values on either side of the claimed value (number). *In re Pampas*, 214 F.2d, 176-177, 102 USPQ 298, 301 (CCPA); *In re De Vaney*, 185 F. 2d 679, 683, 88 USPQ 97, 101 (CCPA 1950); *In re Ayers*, 154 F.2d 182, 185, 69 USPQ 109, 112 (CCPA 1946).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the **primary examiner** should be directed to **Steve Alvo** whose telephone number is **(703) 308-2048**. The Examiner can normally be reached on Monday - Friday from **6:00 AM - 2:30 PM** (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Stanley Silverman, can be reached on 703-308-3837.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Group receptionist** whose telephone number is **(703) 308-0661**.

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MSA
February 15, 2001

STEVE ALVO
PRIMARY EXAMINER
ART UNIT 1731